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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,163	01/31/2001	Herbert F. Cattell	10010011-1	3274

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AGILENT TECHNOLOGIES  
Legal Department, 51U-PD  
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EXAMINER

CLOW, LORI A

ART UNIT PAPER NUMBER

1631

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/775,163

Applicant(s)

CATTELL, HERBERT F.

Examiner

Lori A. Clow, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14, 25-34, 37 and 41-55 is/are pending in the application.
- 4a) Of the above claim(s) 41 and 42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 25-34, 37 and 43-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicants' arguments, filed 20 December 2004, have been fully considered. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Claims 1-14, 25-34, 37, and new claims 43-55 are currently pending. Claims 41 and 42 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Claims 17-24, 35, 36, and 38-40 have been cancelled.

Applicant has graciously pointed out that the Examiner mistakenly rejected claims 1-3, 16, 25-27, and 37 under 35 USC 102(b) (Yang et al.) when the reference was not published more than a year before the filing of the patent application. The Examiner apologizes for this error and intended the rejection to be under 35 USC 102(a), as Applicant has stated.

Applicant has graciously pointed out that the Examiner mistakenly rejected claims 1-14, 16, 25-34, and 37 under 35 USC 102(b) (Genepix) when the reference was not published more than a year before the filing of the patent application. The Examiner apologizes for this error and intended the rejection to be made under 35 USC 102(a), as Applicant has stated.

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-14, 16, 25-34, 37 and new claims 43-55 remain rejected under 35 U.S.C. 102(a) as being anticipated by GenePix Pro Array Analysis Software and Scanner (November 2000).

The Genepix system reads nucleic acids microarrays and has precision imaging analysis such that individual features may be viewed and saved (claims 1-3, 25, 26, 37, 43-45, and 53-55). The Genepix Pro software and scanner can simultaneously acquire data and align two separately scanned images (claims 6, 28, and 48) and allows real-time access to the images (page 1, column 2). Genepix is capable of acquiring data and providing a preview scan such that the user can optimize scan settings and reprocess (claims 5, 8, 9, 10, 27, 30, 47, 50, 51, 52) (page 1, column 2). The software includes an image tab which can offer multiple scanning options. A 10-micron data scan offers the standard resolution, however, scans at smaller microns may be performed to optimize data accuracy. File storage requirements are different for different sample types (page 2, column 1) (claim 4 and 46).

Applicant argues that Genepix does not “save the displayed shapes in a first file and the processed results in a second file”. This is not persuasive because the Genepix system would inherently perform such a process, as it is set up to “correlate array features with identification information from an array list, provide multiple imaging, data reporting and graphing options for individual features as well as entire data sets (page 1)”. The Genepix system is set up to save images in multiple file formats (page 2) and then further analyze the image using automated steps that include preview, data scanning, saving images, analyzing data, and saving the results file (page 2). It is also pointed out that Genepix also provides for saving images, analyzing data using saved array templates, and saving in a result file (claims 7, 29, 49). User defined templates

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define the array layout. Templates can be saved and applied to subsequent array with similar layout. The user may define a minimum feature threshold. The feature viewer displays wavelength images and a ratio of image of that spot. It reports pixel, feature, background, and ratio measurements of intensity without having to perform analysis on the entire image (page 2, column 2) (claims 11-14, 31-34).

Therefore, the claims remain rejected under 35 US 102(a), as recited in the previous Office Action.

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 16, 25-27, 37, and new claims 43-45 and 53-55 rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (University of California, Berkeley Technical Report # 584, November 2000).

Yang et al. teach an overview of microarray technology, including image analysis. DNA microarrays (claim 2, 3, 26, 27) are imaged to measure red and green fluorescence intensities at each spot on a glass slide (claims 1, 25, 37). The intensities correspond to the level of hybridization of the two samples to the DNA. To determine foreground, background, and feature, segmentation and intensity extraction are performed (page 3, Introduction; page 7, section 3.2). Yang et al. developed a software package called Spot, in which microarray images are produced in batches, of which can be exploited to determine characteristics such as shape and size, background estimation, and median pixel (claim 16) value (page 4, lines 4-12).

Applicant argues that Yang et al. do not teach “saving the displayed shapes in a first file and the processed results in a second file. This is not persuasive. Yang et al. clearly teach that “the scanner produces two 16-bit TIFF files, one for each dye imaged (page 5)”. Secondly, on page 6, further analysis is performed on the image in which existing image analysis is performed such that “raw data” are analyzed further to create data that have been processed to remove background noise, improve quality etc...

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Yang et al. do not specifically teach saving processed data to a second file, however it would have been prima facie obvious to one of ordinary skill in the art to have saved the second file of processed information. One would have been motivated to do so as Yang et al. even suggest that comparisons between "raw" images and "background adjusted" images can be made (see page 23, paragraph 2).

No claims are allowed.

### Inquiries

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The Central Fax Center Number is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lori A. Clow, Ph.D., whose telephone number is (571) 272-0715. The examiner can normally be reached on Monday-Friday from 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, Ph.D., can be reached on (571) 272-0718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

March 3, 2005  
Lori A. Clow, Ph.D.  
Art Unit 1631

*Lori A. Clow*

MARJORIE A. MORAN  
PRIMARY EXAMINER

*Marjorie A. Moran*  
3/3/05